LIST OF CONTENTS

Number 1

Articles

J. Appelbaum and **O. Bergshtein** (*Israel*) 1 A solar radiation distribution sensor

Sheldon M. Jeter (*U.S.A.*) 11 Analytical determination of the optical performance of practical parabolic trough collectors from design data

D. J. Close, M. K. Peck and **H. Salt** (*Australia*) 23 Transient response of a packed bed energy store employing a convecting gas vapour mixture

John A. Davies (*Canada*) 31 Parameterization for Rayleigh scattering

Ebtisam S. Wilkins and **Tae K. Lee** (*U.S.A.*) 33 Development of the gel pond technology

David C. Powell and **James R. Connell** (*U.S.A.*) 53 Verification of theoretically computed spectra for a point rotating in a vertical plane

Siegfried Krause (*F.R.G.*) 65 Heat pump house heating system with phase change heat storage in the place of auxiliary heating

Communication

B. A. Pailthorpe, R. E. Collins and **S. O'Shea** (*Australia*) 73 Temperature limitation in evacuated solar collector tubes

77 *Books Received*

Number 2

Articles

K. C. Ting, P. N. Giannakakos and **S. G. Gilbert** (*U.S.A.*) 79 Durability of latent heat storage tube-sheets

Joseph J. Michalsky, Lee Harrison and **Brock A. LeBaron** (*U.S.A.*) 87 Empirical radiometric correction of a silicon photodiode rotating shadowband pyranometer

Khalid A. Joudi and **Shakir M. Madhi** (*Iraq*) 97 An experimental investigation into a solar assisted desiccant-evaporative air-conditioning system

L. O. Lamm and **C. G. Adler** (*U.S.A.*) 109 A new method for the determination of direct insolation

I. R. Edmonds, I. R. Cowling and **H. M. Chan** (*Australia*) 113 The design and performance of liquid filled stationary concentrators for use with photovoltaic cells

T. A. Reddy, J. M. Gordon and **I. P. D. de Silva** (*Thailand*) 123 MIRA: A one-repetitive day method for predicting the long-term performance of solar energy systems

G. L. Morrison and **N. H. Tran** (*Australia*) 135 Correlation of solar water heater test data

A. K. Das and **M. Iqbal** (*Canada*) 143 A simplified technique to compute spectral atmospheric radiation

Letters to the Editor

S. A. Klein (*U.S.A.*) 157 Comments on "Calculation of monthly average daily insolation on tilted, variously oriented surfaces using analytically weighted Rb factors" by U. V. Desnica, B. G. Petrovic and D. Desnica

U. V. Desnica, B. G. Petrovic and **D. Desnica** (*Yugoslavia*) 157 Reply to comments by S. A. Klein

Number 3

D. Pisimanis, V. Notaridou and **D. P. Lalas** (*Greece*) 159 Estimating direct, diffuse and global solar radiation on an arbitrarily inclined plane in Greece

T. Y. Bong, K. C. Ng and **A. O. Tay** (*Singapore*) 173 Performance study of a solar–powered air–conditioning system

M. Matsuta, S. Terada and **H. Ito** (*Japan*) 183 Solar heating and radiative cooling using a solar collector–sky radiator with a spectrally selective surface

D. A. Kouremenos, K. A. Antonopoulos and **E. Rogdakis** (*Greece*) 187 Performance of solar NH_3/H_2O absorption cycles in the Athens area

D. Nullet (*U.S.A.*) 197 A comparison of two methods of estimating insolation over the tropical Pacific Ocean using cloudiness from satellite observations

A. K. Athienitis, H. F. Sullivan and **K. G. T. Hollands** (*Canada*) 203 Discrete Fourier series models for building auxiliary energy loads based on network formulation techniques

A. Goetzberger and **M. Rommel** (*FRG*) 211 Prospects for integrated storage collector systems in Central Europe

R. Perez, R. Seals, P. Ineichen, R. Stewart and **D. Menicucci** (*U.S.A.*) 221 A new simplified version of the Perez diffuse irradiance model for tilted surfaces

R. L. Axelbaum and **H. Brandt** (*U.S.A.*) 233 The effect of substrate surface preparation on the optical properties of a black chrome solar absorber coating

D. K. Anand and **B. Kumar** (*U.S.A.*) 243 Absorption machine irreversibility using new entropy calculations

B. Norton, S. D. Probert and **J. T. Gidney** (*U.K.*) 257 Diurnal performance of thermosyphonic solar water heaters—an empirical prediction method

Number 4

Articles

A. V. Sebald and **G. Vered** (*U.S.A.*) 267 Design and control tradeoffs for rockbins in passively solar heated houses with Trombe walls, direct gain and high solar fractions

K. Tennakone, **S. Wickramanayake**, **S. Punchihewa** and **K. L. Weerasena** (*Sri Lanka*) 291 A theoretical and experimental study of the energy harvest efficiency of an energy crop

I. Mayer and **P. G. Holland** (*Australia*) 297 Linearity and temperature compensation tests on a thermopile pyrheliometer

Pierre Ineichen (*Switzerland*), **Richard Perez** and **Robert Seals** (*U.S.A.*) 301 The importance of correct albedo determination for adequately modeling energy received by tilted surfaces

A. V. Sebald and **D. Munoz** (*U.S.A.*) 307 On eliminating peak load auxiliary energy consumption in passive solar residences during winter

Abraham Zangvil and **Oran Einhorn Aviv** (*Israel*) 321 On the effect of latitude and season on the relation between the diffuse fraction of solar radiation and the ratio of global to extraterrestrial radiation

Giovanni S. Barozzi and **Roberto Grossa** (*Italy*) 329 Shading effect of eggcrate devices on vertical windows of arbitrary orientation

Jan Asle Olseth and **Arvid Skartveit** (*Norway*) 343 A probability density model for hourly total and beam irradiance on arbitrarily oriented planes

S. C. Mullick, T. C. Kandpal and **A. K. Saxena** (*India*) 353 Thermal test procedure for box-type solar cookers

J. Srinivasan and **Abhijit Guha** (*India*) 361 The effect of bottom reflectivity on the performance of a solar pond

Communication

369 An approximation for γ of the fractional time distribution of daily clearness index

Number 5

Articles

Z. M. Zhang, X. S. Ge and **Y. F. Wang** (*China*) 371 A novel pyrheliometer of high accuracy

M. Clerx and **G. J. Trezek** (*U.S.A.*) 379 Performance of an aqua-ammonia absorption solar refrigerator at sub-freezing evaporator conditions

B. H. Chowdhury and **S. Rahman** (*U.S.A.*) 391 Comparative assessment of plane-of-array irradiance models

V. E. Cachorro, **J. L. Casanova** and **A. M. de Frutos** (*Spain*) 399 The influence of Ångström parameters on calculated direct solar spectral irradiances at high turbidity

Z. Zrikem and **E. Bilgen** (*Canada*) 409 Theorectical study of a composite Trombe-Michel wall solar collector system

S. K. Chaturvedi and **M. Abazeri** (*U.S.A.*) 421 Transient simulation of a capacity-modulated, direct-expansion, solar-assisted heat pump

Y. Oosawa, R. Takahashi, M. Yonemura and **T. Sekine** (*Japan*) 429 Proposal of a new H_2S decomposition process using solar energy

K. E. Sirén (*Finland*) 433 The shadow band correction for diffuse irradiation based on a two-component sky radiance model

M. Nunez (*Australia*) 439 A satellite-based solar energy monitoring system for Tasmania, Australia

P. Becker (*U.S.A.*) 445 Monthly average solar radiation in Panama–daily and hourly relations between direct and global insolation

Number 6

Articles

F. C. Kaminsky, R. H. Kirchhoff and **L.-J. Sheu** (*U.S.A.*) 467 Optimal spacing of wind turbines in a wind energy power plant

S. K. Nisbet and **C. M. Kwan** (*U.K.*) 473 The application of the transwall to horticultural glasshouses

J. C. Batty, J. P. Riley and **Z. Panahi** (*U.S.A.*) 483 A water requirement model for salt gradient solar ponds

N. Serpone, Y. K. Ah-You, T. P. Tran, R. Harris (*Canada*), **E. Pelizzetti** (*Italy*) and **H. Hidaka** (*Japan*) 491 AM1 simulated sunlight photoreduction and elimination of Hg(II) and CH_3Hg(II) chloride salts from aqueous suspensions of titanium dioxide

S. A. Klein and **W. A. Beckman** (*U.S.A.*) 499 Loss-of-load probabilities for stand-alone photovoltaic systems

P. D. Lund and **S. S. Peltola** (*Finland*) 513 Verification of CSHPSS simulation program with emphasis on system control

C. R. Prasad, A. K. Inamdar and **P. Venkatesh** (*India*) 521 Computation of diffuse solar radiation

M. J. Brook and **B. A. Finney** (*U.S.A.*) 533 Generation of bivariate solar radiation and temperature time series

D. E. Prapas, B. Norton and **S. D. Probert** (*U.K.*) 541 Optics of parabolic-trough, solar-energy collectors, possessing small concentration ratios

I Volume 39 List of Contents and Author Index